

Application No. 10/591,198

REMARKS

Favorable reconsideration and allowance of the subject application are respectfully requested. Claims 1-2 and 4-8 are pending in the present application, with claims 1 and 8 being independent. Claim 3 has been previously cancelled. New independent claim 8 has been added, which does not add any new subject matter.

Claim Rejections under 35 U.S.C. §112

The Examiner rejected claims 1-7 *[sic]* under 35 U.S.C. §112, first and second paragraph. This rejection is respectfully traversed.

Applicant has amended independent claim 1 in an effort to clarify the claim. Accordingly, because of the amendments made to independent claim 1, the rejection is now rendered moot. Withdrawal of the rejection is respectfully requested.

Claim Rejections under 35 U.S.C. §103

The Examiner rejected claims 1-7 *[sic]* under 35 U.S.C. §103, as being unpatentable over SU 1,196,096 and further in view of Halpern et al. (US 2,878,539). The Examiner also rejected claims 1-7 *[sic]* under 35 U.S.C. §103, as being unpatentable over Anderko et al. (US 3,764,575) and further in view of Melling et al. (US 5,573,055) and Halpern et al. These rejections are respectfully traversed insofar as they pertain to the presently pending claims.

In the conventional salt cores, a synthetic resin binder was utilized so that the steps of pressing and sintering would not have to be performed. However, these synthetic resin binders are subjected to carbonization and outgassing and therefore the

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conventional salt cores need to be pre-heated to a temperature of 600 degrees Celsius in order for the outgassing to occur prior to a casting process. Furthermore, this pre-heating process has additional disadvantages in that suctioning of unwanted gases must be performed, and it is also problematic to place the very hot salt cores into a casting mold.

The present invention utilizes a different binder than the conventional art so that outgassing will not occur at temperatures below 700 degrees Celsius. In addition, the salt cores of the present invention do not need to be heated to a temperature greater than 200 degrees Celsius. Thus, it should be apparent that the present invention solves the problems of the conventional art, e.g. the salt cores of the present invention do not need to be outgassed and are not difficult to be manipulated into a casting mold, because the sintering temperature is substantially lower than the 600 degrees Celsius pre-heating process of the conventional art. In other words, the high temperature pre-heating process of the conventional art can be eliminated.

In the outstanding Office Action, the Examiner acknowledges that SU '096 fails to teach or suggest the use of graphite as a parting agent. However, the Examiner alleges that it would have been obvious to combine SU '096 with Halpern et al., because Halpern et al. teaches the use of a parting agent that includes graphite. Referring to col. 2, lines 32-35 of Halpern et al. it is taught that "[e]xample of lubricants that we may use are the parting agents such as calcium or zinc stearate, talc, graphite...."

Applicant respectfully submits that SU '096 teaches away from the use of a parting agent. In fact, SU ' 096 specifically notes that "[t]he use of Zn is also eliminated," emphasis added. As noted above, Zinc stearate is utilized by Halpern et al. as a parting

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agent. Thus. Because SU ' 096 eliminates the use of Zn, e.g. a parting agent, one skilled in the art would not combine SI '096 and Halpern et al. Therefore, because these cited documents cannot be combined, claim 1 has cannot be rendered obvious by their combination.

Regarding the second rejection of the claims as being unpatentable over Anderko et al. and further in view of Melling et al and Halpern et al., the Examiner acknowledges that Anderko et al. fails to teach or suggest at least the claimed binder and the use of graphite as a parting agent. The Examiner, however alleges that Melling teaches the binding agent and that Halpern et al. teaches the use of graphite as a parting agent.

First, Applicant respectfully submits that Anderko et al. teaches away from the present application. Anderko et al. clearly teaches in col. 1, lines 54-57, that "[i]t is an object of the invention to provide...[a core]...which can be produced without compression and sintering," emphasis added. Furthermore, it is taught in col. 1, line 62, that a synthetic resin is used as a binder. Anderko et al. exhibits precisely those problems that the present invention solves. As noted above, because Anderko et al. utilizes a synthetic resin, the cores in Anderko must be subjected to outgassing. See col. 2, lines 15-20 of Anderko. Furthermore, Anderko also clearly teaches that compression and sintering is not required – thereby also clearly teaching away from the claimed invention. Thus, because Anderko clearly teaches away from the present application, any combination of art with Anderko simply cannot render the claims unpatentable.

Furthermore, Applicant also respectfully submits that the combination of

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Anderko, Melling and Halpern et al. is improper because they would render the other inoperable. In addition, even assuming in arguendo that these reference could be combined, Applicant respectfully submits that the Examiner simply took the Applicant's disclosure as a blueprint for piecing together the prior art to defeat patentability, which is the essence of hindsight.

Dependent claims 2 and 4-7 should be considered allowable at least for depending from an allowable base claim.

Accordingly, withdrawal of the rejection is respectfully requested.

Lastly, new independent claim 8 should be considered allowable because the cited art fails to teach or suggest the combination of features as recited in the claims, and as discussed herein above.

CONCLUSION

Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Martin R. Geissler, Applicants' Attorney at 1.703.621.7140 so that such issues may be resolved as expeditiously as possible.


For these reasons, and in view of the above amendments, this application is now considered to be in condition for allowance and such action is earnestly solicited.

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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 50-3828 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully Submitted,



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